

Appln. No. 10/633,117

Attorney Docket No. 10541-1830

I. Listing of the Claims

1. through 10. (Cancelled)

11. (Currently Amended) ~~An open loop control method according to claim 10, in which the model adjusting step and the air fuel ratio demand adjusting step are not performed if a rich breakthrough is detected and if the estimated oxygen level is greater than a second predetermined threshold and is less than a third predetermined threshold~~ An open loop fuel control method comprising the steps of:

detecting rich breakthrough downstream of a catalyst;

estimating an oxygen storage level in the catalyst with a model;

comparing the estimated oxygen storage level with a plurality of predetermined thresholds;

adjusting an air fuel ratio demand in dependence upon the results of said comparing step and said detecting step, the fuel ratio demand being adjusted in a rich direction if the estimated oxygen storage level is less than a first predetermined threshold; and

adjusting the model in the estimating step in dependence upon the results of said comparing step and said detecting step, the adjusting to the estimating step and the adjusting to the air fuel ratio demand step not being performed if a rich breakthrough is detected and if the estimated oxygen level is greater than a second predetermined threshold and is less than a third predetermined threshold.

12. (Original) An open loop fuel control method according to claim 11, in which adjusting the air fuel ratio demand comprises the sub-step of:

if a rich breakthrough is detected and the estimated oxygen storage level is greater than a fourth predetermined threshold then the air fuel ratio demand is adjusting in a lean direction.

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13. (Currently Amended) An open loop fuel control method according to claim ~~[[9]]~~ 11, in which the model adjusting step is arranged to adjust the model such that a maximum value for the oxygen storage level is increased if a rich breakthrough is detected and if the estimated oxygen level is greater than a first predetermined threshold and less than a second predetermined threshold.

14. (Original) An open loop fuel control method according to claim 13, in which the model adjusting step is arranged to adjust the model such that a maximum value for the oxygen storage level is decreased if a rich breakthrough is detected and if the estimated oxygen level is greater than a third predetermined threshold and less than a fourth predetermined threshold.

15. (Original) An open loop fuel control method according to claim 11 wherein the first predetermined threshold is less than or equal to the second predetermined threshold and the second predetermined threshold is less than or equal to the third predetermined threshold.

16. (Original) An open loop fuel control method according to claim 12 wherein the first predetermined threshold is less than or equal to the second predetermined threshold and the second predetermined threshold is less than or equal to the third predetermined threshold and the third predetermined threshold is less than or equal to the fourth predetermined threshold.

17. (Original) An open loop fuel control method according to claim 14 wherein the first predetermined threshold is less than or equal to the second predetermined threshold and the second predetermined threshold is less than or equal to the third predetermined threshold.

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18. (Original) An open loop fuel control method according to claim 14 wherein the first predetermined threshold is less than or equal to the second predetermined threshold and the second predetermined threshold is less than or equal to the third predetermined threshold and the third predetermined threshold is less than or equal to the fourth predetermined threshold.



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